VIOLENT LOCAL STORM IN NEVADA, JULY 24, 1931

By J. R. FULKS

[Weather Bureau Office, Winnemucca, Nev., August 10, 1931]

An intense storm, resembling a small tornado, occurred at the Leonard Creek ranch, Humboldt County, Nev., at about 1 p. m. (one hundred and twentieth meridian time) on July 24, 1931. This ranch is about 70 miles northwest of Winnemucca and at about 118° 47′ W., 41° 30′ N.

The scene of the storm was visited two days later by Mr. Smith, official in charge at Winnemucca, and myself.

The Leonard Creek ranch is located in a narrow canyon which opens into the northern edge of the Black Rock Desert, a level arid region about 60 miles long and 15 to 20 miles wide. The country immediately surrounding the ranch is mostly low hills with rather high mountains rising a few miles to the north..

This storm appeared to have a whirling motion, as described by Mr. Ramon Montero, one of the ranch owners, and was of considerable violence along a short and very narrow path.

The storm, while of little significance when compared to local storms, occurring in the middle western and southern portions of the United States, deserves mention because of the infrequency of such in this vicinity, and also because it occurred on the same day as a thunderstorm, which, as observed at Winnemucca, showed cold-front characteristics. It is also worthy of mention that it happened during the period of warmest weather of record in the middle Plateau region.

We are able to find a record of only two tornadoes (or those so classified) in Nevada hitherto. One of these was at Winnemucca on December 16, 1879, the other at Fallon on April 29, 1915.

Mr. Montero describes the whirl as originating on or near a small conical peak about 500 yards west of the ranch buildings. Its development is given as accompanied by a single dark cloud and a few claps of thunder; the general appearance of the sky as clear except for a few other scattered clouds and a thunderstorm which appeared to be passing over the mountains to the north. Temperature is described as being excessively warm before, and slightly cooler after, the storm; and wind, both before and after, as very light. A better description of the appearance could not be obtained, as Mr. Montero explained that the excitement incident to getting himself and family to a place of safety made a more accurate observation impossible.

The whirl apparently moved in a curved or irregular path, as the only building destroyed is east of the place where it was first observed, and at the point of damage the storm moved toward the northeast. The exact place at which it dissipated could not be determined, but débris is scattered for only about one hundred yards, and no evidence of it is visible further than that. Land in that direction is covered with sagebrush. The total distance traversed was, therefore, as near as could be determined, about 600 yards. Its width is estimated at 50 feet.

A small narrow lambing shed about 50 feet long, substantially constructed of heavy timber, was completely destroyed. A larger building adjoining it to the west and apparently no more substantial was not damaged. A garden is to the east of the shed, and while Mr. Montero says some of the vegetables were uprooted, but little damage was apparent. Timber of the building, broken down but still hanging, leaned toward the north. A small schoolhouse about 75 feet to the north, located within the edge of a grove of trees, was not damaged. A hay wagon, standing between the two buildings and about 25 feet from the schoolhouse, was moved eastward a distance of 200 feet, where it was left undamaged. Mr. Montero believes that this was picked up completely from the ground. No evidence of its being moved along the surface could be found except within a few feet of the place it was left after the storm. Had it moved over the surface, the tongue, which hung loose, should have left a visible mark. Very little damage was done to the grove of trees; a few broken branches left hanging were twisted at the point broken, and some débris was caught in the trees.

No data were obtainable on the rate of movement, except that Mr. Montero says it seemed to come up and was over in an instant. Also the direction of whirl could not be determined.

Mr. Montero estimated damage to the building at $1,500. No one was injured.

The weather map on the morning of July 24 shows a trough of low pressure over California and Arizona, axis northwest and southeast, and a ridge of high pressure extending southeastward from the mouth of the Columbia River into northern Nevada. The following morning shows the trough less marked, and pressure gradients over the remainder of the country very weak, with the ridge of high pressure in the Northwest no longer noticeable. Very light precipitation occurred during the 24 hours over a narrow strip extending from northern Nevada to southeastern Wyoming.

A thunderstorm began at Winnemucca at 6.46 p. m. of the 24th; rain began at 6.50 p. m. and ended at 9.15 p. m., with total precipitation 0.12 inch. Wind from 2 p. m. to 7 p. m. was from the northwest. During the first hour of the storm south wind prevailed, during the second hour east, and thereafter northeast throughout the night. The maximum velocity was 31 miles per hour from the south at 7 p. m. The pressure rose 0.15 inch from 7 to 9 p. m., then fell 0.03 inch, rose 0.03 inch, and remained stationary throughout the rest of the night. The temperature dropped from 92° at 6.45 p. m. to 69° at 8 p. m. The direction of movement of the storm appeared to be eastward. This thunderstorm differed from most others at this station in that it showed a slightly greater and more permanent pressure rise, and light continuous precipitation for a longer period of time.